

# A REVISION OF THE TRIGGERFISH GENUS *XANTHICHTHYS*, WITH DESCRIPTION OF A NEW SPECIES

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## ABSTRACT

The balistid genus *Xanthichthys* is characterized by: convex dorsal and ventral profiles of head, a projecting lower jaw, three to six longitudinal grooves on side of head, a groove running anteriorly from eye, no osseous plates behind gill opening, a narrow caudal peduncle, and second dorsal and anal fins elevated anteriorly. It consists of five species: the Atlantic *X. ringens* (Linnaeus), the Indo-West-Pacific *X. lineopunctatus* (Hollard), *X. auromarginatus* (Bennett), and *X. caeruleolineatus* new species, and the Pacific *X. mento* (Jordan and Gilbert). *X. caeruleolineatus* is distinctive in its low dorsal soft-ray count (26 to 28), low anal-ray count (23 to 25), high number of head-scale rows (21 to 24), large size (attains more than 300 mm SL), and color pattern which features an irregular blue longitudinal line along the side of the body. *X. mento* and *X. auromarginatus* are sexually dichromatic.

The triggerfish genus *Xanthichthys* was established by Kaup in Richardson (1856). It is a well defined unit, and since its inception most species reported in the literature have been correctly allocated to the genus. There has, however, been great confusion in the classification at the species level. Only 14 nominal forms have been described, which is not many for the five wide-ranging valid species. The confusion has centered mainly on misidentifications. The name *ringens* (Linnaeus), for example, has often been applied to species in the Pacific and Indian Oceans (as well as to *Melichthys niger*; see Randall and Klauswitz, 1973). *X. ringens*, however, is confined to the Atlantic. Some taxonomic difficulty has arisen from the striking sexual dichromatism of two species, *X. auromarginatus* (Bennett) and *X. mento* (Jordan and Gilbert).

Berry and Baldwin (1966) contributed substantially to our knowledge of the systematics of the Balistidae in their study of the eastern Pacific representatives of the family. They wisely did not confine their treatment to this region, for some balistids reach large size as juveniles and can attain a broad distribution. They concluded that there are three species of *Xanthichthys*: *ringens*, which they correctly restricted to

the Atlantic, *lineopunctatus* (Hollard), Indo-Pacific, and *mento*, Pacific (the only species occurring in the eastern Pacific).

Klauswitz (1974) utilized the name *X. auromarginatus*; however, he stated that it and *lineopunctatus* probably represent sexually dimorphic forms of a single species.

We recognize five species in the genus: *ringens*, *lineopunctatus*, *auromarginatus*, *mento*, and *caeruleolineatus*, new species.

## MATERIAL AND METHODS

We have examined specimens of *Xanthichthys* from the following institutions: Academy of Natural Sciences of Philadelphia (ANSP); Australian Museum, Sydney (AMS); Bernice P. Bishop Museum, Honolulu (BPBM); British Museum (Natural History), London [BM(NH)]; California Academy of Sciences, San Francisco (CAS and SU); Gulf Coast Research Laboratory, Ocean Springs, Mississippi (GCRL); Laboratory of Marine Zoology, Hokkaido University, Hakodate (HUMZ); Kochi Senior High School; Department of Biology, Faculty of Science, Kochi University (BSKU); Natural History Museum of Los Angeles County (LACM); School of Marine and Atmospheric Science, University of Miami (UMML); Muséum National d'Histoire

Naturelle, Paris (MNHN); University of Puerto Rico, Mayaguez (UPR); J.L.B. Smith Institute of Ichthyology, Rhodes University, Grahamstown (RUSI); Senckenberg Museum, Frankfurt (SMF); Ichthyological Laboratory, Tokyo University of Fisheries (TUFO); Museum of Tokyo University of Fisheries (MTUF); Tulane University, New Orleans (TU); and U.S. National Museum of Natural History, Washington, D.C. (USNM).

The pectoral-ray count does not include the small rudimentary ray at the upper base of the fin. This rudiment is more apparent on juveniles than adults.

The body-scale rows were counted from the upper end of the gill opening to the caudal base. These counts include the diagonal rows of small scales just behind the gill opening.

The head-scale rows were counted from just posterior to the corner of the mouth to the upper end of the gill opening. This count includes small scales at either end. Because the scales on the head (and at times on the body as well) are not all in perfect alignment and because of intercalated rows on many specimens, precise scale counts may be difficult to obtain.

Exploratory gill-raker counts of a total of 16 specimens of the five species of *Xanthichthys* gave little promise of being a useful character. The counts of all five species fell within the range of 36 to 42. Because of this and the damage to specimens resulting from the necessity to greatly enlarge the gill opening to make this count, no further data on rakers were obtained.

Standard length (SL) was taken from the tip of the snout to the caudal base in millimeters. Depth of body, width of body, head length, snout length, tip of snout to origins of first dorsal, second dorsal, and anal fins, and length of second dorsal fin and anal fin bases are expressed in terms of the standard length (*i.e.* these measurements divided into the SL).

Head length was measured from the tip of the snout to the upper end of the gill

opening. The remaining 12 body and fin proportions were obtained by dividing the measurements into the head length.

Maximum depth of all the species collectively is given in the generic description. This depth measurement is variable due mainly to differences in the extension of the pelvic flap from individual to individual at the time of preservation. For the key and species accounts the depth was taken as the vertical measurement from the origin of the anal fin to the base of the second dorsal fin (excluding the scaly sheath of the dorsal base).

Width of the body is the maximum width.

Depth of the caudal peduncle is the least depth.

Eye diameter is the maximum fleshy diameter of the orbit.

Interorbital width is the least bony width (though for balistids there is little difference between bony and fleshy width).

Interdorsal space is the distance from the posterior edge of the first dorsal spine at its base to the origin of the first ray of the second dorsal fin (excluding the basal scaly sheath).

Measurements of the longest ray of the second dorsal and anal fins exclude the basal scaly sheath.

Bases of the second dorsal and anal fins were measured from the anterior margin of the first ray at the upper edge of the basal scaly sheath to the posterior edge of the last ray.

Caudal concavity is the horizontal distance between the distal tips of the longest and shortest caudal rays.

The drawings were made by K. Matsuura. The color photos were taken by J. Randall.

### Genus *Xanthichthys* Kaup

*Xanthichthys* Kaup in Richardson, 1856: 313  
(type species, *Balistes curassavicus* Gmelin =  
*Balistes ringens* Linnaeus, by monotypy).

**Description.**—Body moderately deep, the maximum depth 1.83–2.53 in SL, the depth at origin of anal fin 2.45–3.43 in SL; width of body 4.38–6.64 in SL; head

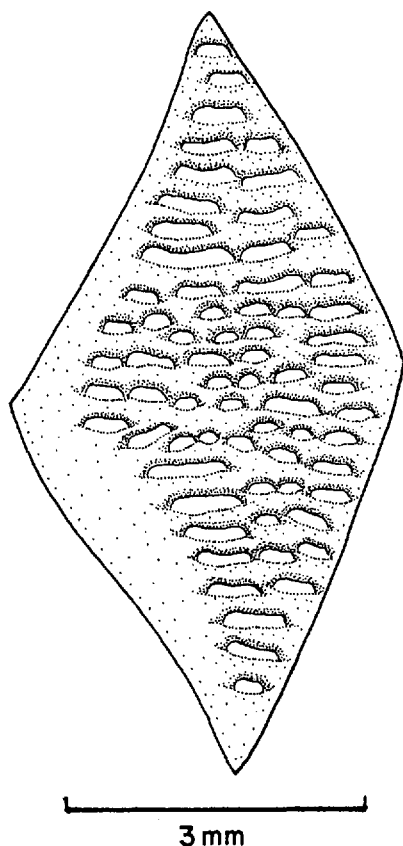


Figure 1. Scale of 150-mm *Xanthichthys ringens* from below origin of second dorsal fin.

length 2.76–3.44 in SL (head relatively shorter in larger individuals, in general); dorsal and ventral profiles of head convex; snout moderately long, 4.29–5.32 in SL; eye small, the orbit diameter 3.57–6.64 in head (relatively smaller in larger individuals); interorbital space convex, the width 2.33–3.28 in head; gill opening nearly vertical, short, 3.08–5.11 in head; no area of enlarged osseous plates behind gill opening; caudal peduncle narrow, the least depth 3.44–5.21 in head; a series of three to six longitudinal somewhat diagonal grooves on cheek (these grooves represent a broadening and deepening of the linear gaps which separate the rows of scales; they are not well developed on *auromarginatus*); a groove

running anteriorly and diagonally downward on snout from front of eye below nostrils; lips small; nostrils small, close-set, anterior to center of eye; no lateral line; scales typical of the family, rhomboidal, not overlapping, with numerous little nodules and short longitudinal ridges over the surface except near margins (Fig. 1); diagonal scale rows on body 39 to 50 (Table 1); head scale rows 17 to 24 (Table 1); median longitudinal ridge on scales posteriorly on body slightly to moderately developed; pelvic flap not well developed; pelvic terminus movable; first dorsal spine stout, originating above gill opening, its length 1.55–2.48 in head (dorsal spine of postlarvae and juveniles notably greater in relative length and bearing larger spinules on anterior surface); second dorsal spine short and slender, immediately behind the first, and capable of locking the first in erect position when moved forward; third dorsal spine minute, well posterior to first two, and rarely extending above edge of groove on back into which first spine folds; second dorsal and anal fins elevated anteriorly (generally third to fifth the longest), except in prejuveniles and small juveniles; second dorsal fin with 26 to 32 rays (Table 2); anal fin with 23 to 29 rays (Table 2); pectoral fins short, rounded, with 12 to 14 rays (usually 13) (Table 2); caudal fin emarginate to lunate with 12 principal rays, the most dorsal and ventral unbranched; mouth very small; teeth whitish to yellowish, sharply incisiform with tapering notched ends, 8 in each jaw, the uppers buttressed with an inner row; gill rakers 36 to 42; vertebrae 7 + 11 = 18.

#### KEY TO THE SPECIES OF *XANTHICHTHYS*

- 1a. Cheek with three prominent slightly diagonal dark brown grooves (a shorter narrower groove above and one below the main three sometimes dark on *lineopunctatus*), extending from just behind and below corner of mouth nearly to gill opening; body with dark longitudinal lines and/or spots ..... 2
- 1b. Cheek with five or six grooves (darkly pigmented only on *mento*; poorly developed on *auromarginatus*); body without dark longitudinal lines and spots except males

- of *mento* with a small light blue spot in scale centers that may be brown in preservative (in addition, a concentration of dark pigment at the corners of the scales of some specimens of *mento*, giving a dark-spotted effect) ..... 3
- 2a. Body with a single round to longitudinally elliptical dark brown spot at corner of each scale; scales between upper end of gill opening and caudal fin base 39 to 44 (tropical Atlantic) ..... *ringens*
- 2b. Upper half of body with longitudinal dark brown lines following scale rows, lower half with a dark brown dash or spot at corner of each scale; scales between upper end of gill opening and caudal base 44 to 50 (Indian Ocean, Australia, and Japan) ..... *lineopunctatus*
- 3a. Depth of body at anal fin origin 2.45 to 2.68 in standard length; scales of body with a prominent median elevation, forming longitudinal ridges (better developed posteriorly) (Indo-Pacific) ..... *auromarginatus*
- 3b. Depth of body at anal fin origin 2.7 to 3.43 in standard length; scales of body with only slight median ridges posteriorly on body ..... 4
- 4a. Dorsal soft rays 29 to 32; anal soft rays 26 to 29; no longitudinal blue line on body (eastern, central and western Pacific) ..... *mento*
- 4b. Dorsal soft rays 26 to 28; anal soft rays 23 to 25; an irregular longitudinal blue line on body from pectoral axil to upper side of caudal peduncle (Indo-Pacific) ..... *caeruleolineatus* new species

### *Xanthichthys ringens* (Linnaeus)

#### Figures 2A and 3

*Balistes ringens* Linnaeus, 1758: 329 (type locality not Ascension Island, as given, but probably western Atlantic—see Remarks).

*Balistes curassavicus* Gmelin, 1788: 1472 (type locality, Curaçao).

*Balistes notatus* Gronow in Gray, 1854: 36 (type locality, both Indies).

*Balistes nitidus* Gronow in Gray, 1854: 36 (type locality, American Ocean).

*Balistes cicatricosus* Poey, 1861: 327 (type locality, Cuba).

*Balistes heckeli* von Müller, 1864: 182 (type locality, off east coast of Mexico).

**Description.**—Dorsal soft rays 26 to 29 (modally 28); anal soft rays 23 to 27 (modally 25 or 26); pectoral rays 13 or 14 (usually 13); body scale rows 39 to 44; head scale rows 18 to 22.

Depth of body at origin of anal fin 2.55–3.17, width of body 5.16–6.64, head length 2.76–3.19, snout length 4.38–4.95, snout to origin of first dorsal fin 2.67–3.17, snout to origin of second dorsal fin 1.54–1.70, snout to origin of anal fin 1.47–1.57, base of sec-

ond dorsal fin 2.87–3.18, base of anal fin 3.20–3.66—all in SL. Eye diameter 3.50–5.31, interorbital width 2.63–3.28, length of gill opening 3.14–4.47, depth of caudal peduncle 3.93–4.44, length of first dorsal spine 1.63–2.30, length of longest (third to fifth) dorsal ray 1.53–2.07, longest (usually third) anal ray 1.71–2.26, interdorsal space 1.19–1.38, length of caudal fin 1.47–1.75, caudal concavity 5.0–10.36, length of pectoral fin 2.43–3.14—all in head length.

Three longitudinal slightly diagonal darkly pigmented grooves on head running from below and behind corner of mouth nearly to lower gill opening and upper pectoral base. Scales on side of posterior half of body with some of the tubercles and short ridges slightly enlarged in the median line, thus forming feeble longitudinal ridges.

Color in alcohol light brownish gray with a round to longitudinally elliptical pale-edged dark brown spot at the corners of the scales on the body except ventrally and on caudal peduncle; grooves on cheek dark brown; lips dark brown; anterior nostril in a small white spot; first dorsal spine dark brown anteriorly except tip which is pale; outer part of membrane of first dorsal fin broadly dark brown (almost black); second dorsal and anal fins pale except for a dark brown band at extreme base; caudal fin broadly brown on margins, the posterior in the form of a crescent.

The ground color of an adult specimen shortly after removal from the sea (Fig. 2A) is not very different from preserved material. The margins of the caudal fin are reddish; submarginally in the posterior part of the fin there is a bright orange-red crescent. The first dorsal fin is dark orangish brown; the second dorsal and anal fins are very narrowly edged with yellow. The three grooves on the cheek are dark brown in the middle and blue along the edges; the narrow grooves separating the scales on the head are light bluish. When viewed alive underwater, however, the overall color is blue, not brownish gray.

Dawson (1962) recorded the life color of a specimen 63.4 mm SL (GCRL V61:411)

Table 1. Frequency distributions of scale counts in *Xanthichthys*

	Body scale rows														Head scale rows							
	39	40	41	42	43	44	45	46	47	48	49	50	17	18	19	20	21	22	23	24		
<i>X. ringens</i>	3	7	11	11	5	3								3	12	15	8	2				
<i>X. lineopunctatus</i>						1	1	2	1	4	2	2	1	3	5	3	1					
<i>X. auromarginatus</i>				1	4	8	3	2	1				4	7	7	1						
<i>X. mento</i>			1	1	2	7	10	5	3	1	2	1			8	12	10	3				
<i>X. caeruleolineatus</i>	1	2	5	1	2	3	2	1	1								1	6	10	1		

collected from floating *Sargassum* in the northern Gulf of Mexico as follows: "caudal light red; black lateral spots; pink to lavender coloration of the dorsolateral surface with bluish white on the ventrolateral aspect; first dorsal membrane was black."

Beebe (1928: frontispiece) illustrated five different color phases of the same individual (about 70 mm SL). The color of the body varied greatly from bright blue on the back (which Beebe described as the normal surface color) to dark gray, lavender, yellow, and white (assumed just before death), sometimes with yellow or orange spots. Only the yellow of the iris, large black area of the first dorsal fin, and the red, white-centered caudal fin remained constant in color.

Moore (1967) figured a 49.6-mm pre-juvenile and a 152-mm adult from photographs.

**Remarks.**—A total of 98 specimens were examined, ranging from 18 to 198 mm SL. The largest of these (which measures 243 mm total length) is in the British Museum (Natural History); it was taken during the voyage of the "Herald" but no locality data are available with the specimen. Propor-

tional measurements are based on 16 specimens, 63 to 198 mm SL.

Moore (1967) has given the distribution of *X. ringens* as follows: "known only from the western Atlantic, from Bermuda and South Carolina through the northern Gulf of Mexico and to the Lesser Antilles." We have examined juvenile and adult specimens from the following localities (museum numbers and standard length given for those that represent new records): Bermuda, Bahamas, Florida, Yucatan, Honduras in 37 fathoms (ANSP 113831: 63 mm SL), Courtown Cay, western Caribbean, Cuba, Jamaica, Puerto Rico, Isla de Mona, Virgin Islands, St. Lucia, Curaçao and Macuripe, Fortaleza, Brazil (nearly 4°S) (SU 52303: 166 mm SL).

Günther (1870) seems to have been the first responsible for the error in regarding *X. lineopunctatus* (Hollard) as a junior synonym of *X. ringens*, thus indicating an occurrence of *ringens* at Mauritius. Others have followed this mistake; also specimens we now identify as *X. mento* have been identified as *ringens* (as by Fowler, 1928, Clark, 1949, and Gosline and Brock, 1960). This led Briggs (1960, 1961) to the errone-

Table 2. Frequency distributions of fin-ray counts of *Xanthichthys*

Species	Second dorsal								Anal								Pectoral*		
	26	27	28	29	30	31	32		23	24	25	26	27	28	29		12	13	14
<i>X. ringens</i>	2	6	23	9					1	5	17	16	1				34	6	
<i>X. lineopunctatus</i>		1	6	6							5	7	1				11	2	
<i>X. auromarginatus</i>			5	7	6	1					7	10	2				1	15	3
<i>X. mento</i>				4	17	11	1					1	15	16	1		3	28	2
<i>X. caeruleolineatus</i>	4	13	1						1	14	3						1	17	

\* The uppermost rudimentary ray not included in pectoral fin count.

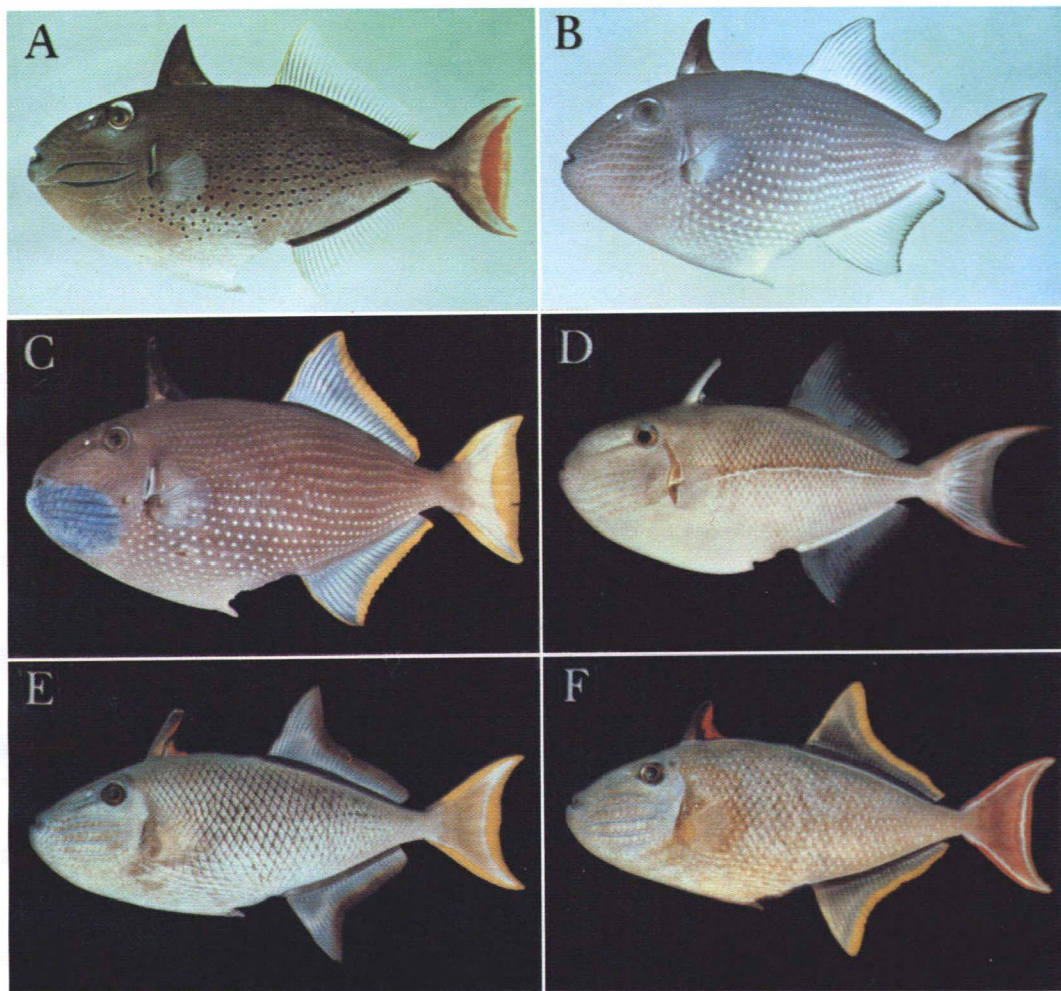


Figure 2. A. *Xanthichthys ringens*, 141 mm SL, Puerto Rico (specimen lost). B. *X. auromarginatus*, female, 113 mm SL, Mauritius, BPBM 20010. C. *X. auromarginatus*, male, 122 mm SL, Mauritius, BPBM 20010. D. Holotype of *X. caeruleolineatus*, male, 196 mm SL, Manihi, Tuamotu Archipelago, BPBM 13211. E. *X. mento*, female, 130 mm SL, Pitcairn, BPBM 16822. F. *X. mento*, male, 155 mm SL, Manihi, Tuamotu Archipelago, BPBM 13256.

ous conclusion that *X. ringens* is a circum-tropical species.

Linnaeus (1758) included the *Balistes nigra* of Osbeck [= *Melichthys niger* (Bloch)] among the citations he attributed to *Balistes ringens*, and this appears to be the basis for his type locality of Ascension Island. *X. ringens* is not known from Ascension, though a record from the island would not be surprising. There seem to be no valid records of *X. ringens* from the eastern At-

lantic, though again the possibility of its occurrence there in the few localities with suitable habitat must be admitted. Fowler (1936) and Moore (1967) reported the species from the Azores on the assumption that *Balistes elongatus* Hollard is *X. ringens*. In view of Hollard's description of *elongatus*, however, such a decision is not tenable. The holotype of *Balistes elongatus* is not extant.

Randall (1968) noted that adults of *X. ringens* are rarely encountered at depths less



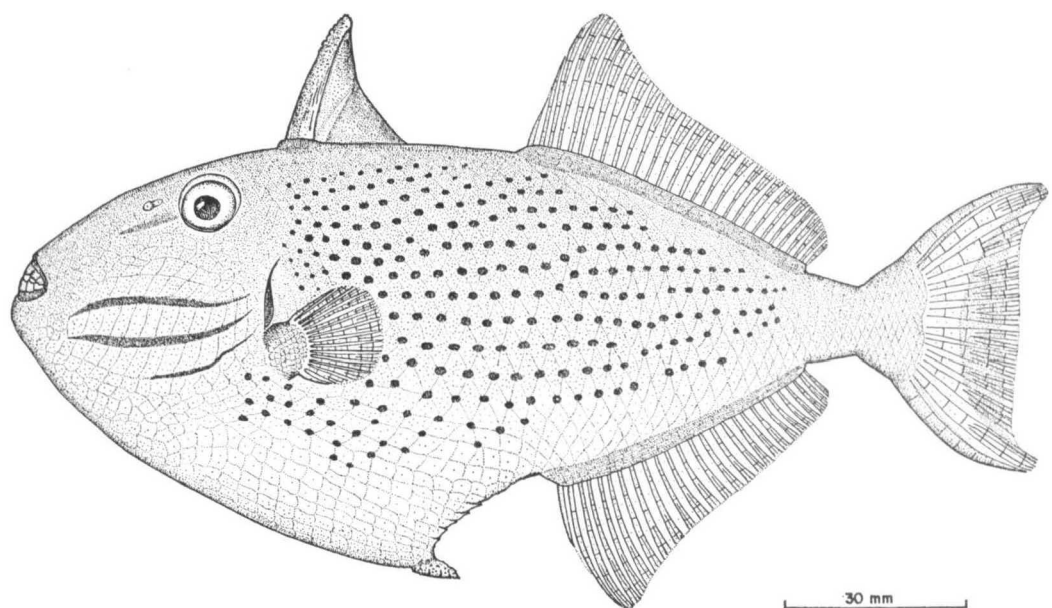


Figure 3. *Xanthichthys ringens*, 150 mm SL, Curaçao, BPBM 20327.

than about 100 feet (30.5 m), adding that this species becomes one of the most abundant West Indian reef fishes beyond this depth. Caldwell (1966) recorded a specimen from "about 60 fathoms" which was taken off Rio Bueno, Jamaica. This represents the greatest depth of capture. Colin (1974), however, has made submarine observation of the species to a maximum of 130 m off Discovery Bay, Jamaica.

Judging from its frequent position well above the bottom, *X. ringens* feeds mainly, if not entirely, on zooplankton.

The juveniles are often found in association with floating *Sargassum*, hence the common name for the species, "Sargassum Triggerfish." They may be taken far from land or shallow water. A 52-mm specimen (SU 57240-1), for example, was collected 120 miles east of San Salvador in the Bahamas. They have also been found in the stomachs of large pelagic fishes. ANSP 106759 consists of 19 specimens 27 to 63 mm SL which are labelled as stomach content material from *Coryphaena* caught off Florida at 26°11'N; 75°59'W. The label of

BM(NH) 1878.5.20.2, a 60-mm prejuvenile, reads, "Found inside a dolphin caught in mid-Atlantic."

The largest prejuvenile specimen examined (UMML 3030, 69 mm SL) was taken from the stomach of a *Coryphaena hippurus* caught off San Juan, Puerto Rico.

Linnaeus (1758: 329) based his description of *Balistes ringens* on three earlier descriptions, only one of which could be the species here regarded as *X. ringens*. This was a specimen that he examined at Göteborg on July 10, 1876 during a journey in Wastgotland. It was collected by a man named Boetius, but no locality was given. This specimen, which is designated as the lectotype, was recently examined in Stockholm by Alwyne C. Wheeler who confirmed the identification. The locality of Ascension Island given by Linnaeus for *B. ringens* refers to the "*Balistes nigra*" of Osbeck, a species now recognized as *Melichthys niger* (Bloch).

A syntype of *Balistes notatus* Gronow in Gray (1854) [BM(NH) 1853.11.12.188, a dried skin 126 mm SL] was examined. It is

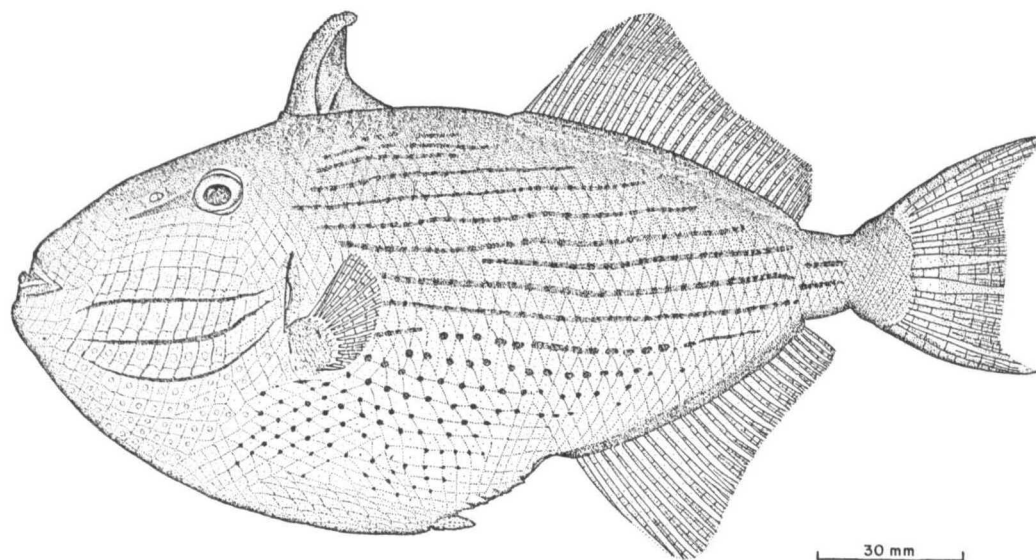


Figure 4. *Xanthichthys lineopunctatus*, male, 169.7 mm SL, Okinawa, HUMZ 40642.

*X. ringens*. No locality data are available, but it must have been the Atlantic. As this appears to be the only available specimen, it is to be regarded as the lectotype.

The type specimen of *Balistes nitidus* Gronow was also examined [BM(NH) 1853.11.12.189, a dried skin 71 mm SL]; it too is *X. ringens*.

The holotype of *Balistes cicatricosis* Poey is in the Museum of Comparative Zoology, Harvard University (MCZ 11953, 161 mm SL).

#### *Xanthichthys lineopunctatus* (Hollard)

##### Figure 4

*Balistes lineo-punctatus* Hollard, 1854: 65 (type locality, île Bourbon = Réunion).

**Description.**—Dorsal soft rays 27 to 29; anal soft rays 25 to 27; pectoral rays 13 or 14 (usually 13); body scale rows 44 to 50; head scale rows 17 to 21.

Depth of body at origin of anal fin 2.59–2.80, width of body 5.03–6.25, head length 2.97–3.26, snout length 4.51–4.80, snout to origin of first dorsal fin 2.94–3.09, snout to origin of second dorsal fin 1.66–1.71, snout to origin of anal fin 1.42–1.50, base

of second dorsal fin 2.68–2.95, base of anal fin 3.05–3.40—all in standard length. Eye diameter 4.30–6.16, interorbital width 2.63–2.93, length of gill opening 3.08–3.84, depth of caudal peduncle 3.78–4.84, length of first dorsal spine 2.07–2.48, length of longest (fourth to sixth) dorsal ray 1.39–1.95, length of longest (third) anal ray 1.50–2.04, inter-dorsal space 1.19–1.41, length of caudal fin 1.38–1.88, caudal concavity 5.0–10.50, length of pectoral fin 2.50–3.06—all in head length.

Three longitudinal slightly diagonal darkly pigmented grooves on head (sometimes a shorter narrower groove above and below these three) running from below and behind corner of mouth nearly to gill opening. Scales on side of posterior half of body with some enlarged tubercles in the median line, thus forming feeble longitudinal ridges.

Color in preservative brownish gray, paler below; upper half of body with dark longitudinal lines along centers of scale rows (sometimes interrupted); lower half of body except ventrally with a dark brown spot at corner of each scale; grooves of cheek dark



brown; first dorsal fin and bases of second dorsal and anal fins dark brown; rays of second dorsal and anal fins brownish gray, membranes pale; pectoral fins pale; caudal fin light brown with a large pale crescent-shaped area centrally, the attenuate ends of the crescent extending into caudal lobes.

Color in life brownish gray, paler below, with a bluish cast on body and yellowish on head; upper half of body with dark brown longitudinal lines, sometimes interrupted; lower half with dark brown spots, faintly edged in light bluish; dark brown grooves on cheek edged with light blue; scales on lower two-thirds of head with a small yellowish spot; first dorsal fin dark brown; second dorsal and anal fins with brownish rays, light bluish membranes, each with dark brown on basal scaly sheath; caudal fin with narrow brown upper and lower margins, and an orange-red submarginal band; a broad crescent of orange-red posteriorly in fin; a large light bluish gray crescent in center of fin; pectoral fins light yellowish.

**Remarks.**—A total of 13 specimens, 137 to 257 mm SL, were examined; nine, 137 to 197 mm SL, were used in the measurement data given above. These were from the Natal coast of South Africa, Réunion, and the Ryukyu Islands.

The specimen regarded as the holotype of *Balistes lineopunctatus* Hollard is in the Muséum National d'Histoire Naturelle in Paris (MNHN A.8529, a dried specimen from Réunion, 160 mm total length), according to Le Danois (1961). Hollard, however, gave the total length of his holotype as 195 mm, so either he made an error in this (and other) measurements or this fish is not the type. Le Danois listed another Réunion specimen as a paratype, but this is impossible because Hollard based his description of *lineopunctatus* on a single specimen. This second fish, MNHN 4071, 168 mm SL, though larger, could not be the holotype as it is preserved in alcohol; Hollard stated that the holotype is a stuffed specimen.

Barnard (1927) recorded the species (as *Canthidermis ringens*) from the Natal coast

of South Africa, and Smith (1961: 409, pl. 90, fig. 1165) (as *X. ringens*) from Port Alfred, South Africa (34.6°S). As explained in the Remarks under *X. ringens*, *lineopunctatus* has often been misidentified as *ringens*. Also *X. mento* has been erroneously considered a junior synonym of *lineopunctatus* by a number of authors, such as Jordan and Evermann (1905).

Yamakawa (1971: 16–17, fig. 5) recorded the first specimen from the Ryukyu Islands. It was taken off Koniya in the Amami O Shima Group. He proposed the new Japanese name “Suji-name-mongara” for this species. We obtained a second Ryukyu specimen from Okinawa collected by S. Gushiken in September, 1973 (HUMZ 40642, a male, 169.7 mm SL).

Hiyama and Yasuda (1972: 232, fig. 256) illustrated the species in color and recorded it from Australia (as *Balistes ringens*). We asked Dr. Yasuda if he could provide a more specific locality than Australia. He replied that the specimen was collected about 30 years ago, and its data were destroyed during an air raid of World War II.

Klausewitz (1974) listed India as a new locality for *X. lineopunctatus*. We examined the specimen on which this record is based (SMF 2951, 184 mm SL, dried and varnished) and concur with the identification. The label reads “Indian Ocean, India, Boissoneau, ded. 1845.” Because this would be the first tropical record of the species we queried Dr. Klausewitz about the possibility of locality error. He replied that India does seem to be a mistake and the probable locality is Mauritius or Réunion.

Following M. M. Smith (1975) we adopt the English common name “Striped Triggerfish” for this species.

*Xanthichthys auromarginatus* (Bennett)  
Figures 2B, 2C and 5

*Balistes auromarginatus* Bennett, 1831: 168  
(type locality, Mauritius).

*Balistes calolepis* Hollard, 1854: 67, pl. 3, fig. 5  
(type locality, Mauritius and Réunion).

**Description.**—Dorsal soft rays 27 to 30; anal rays 25 to 27; pectoral rays 12 to 14 (usually

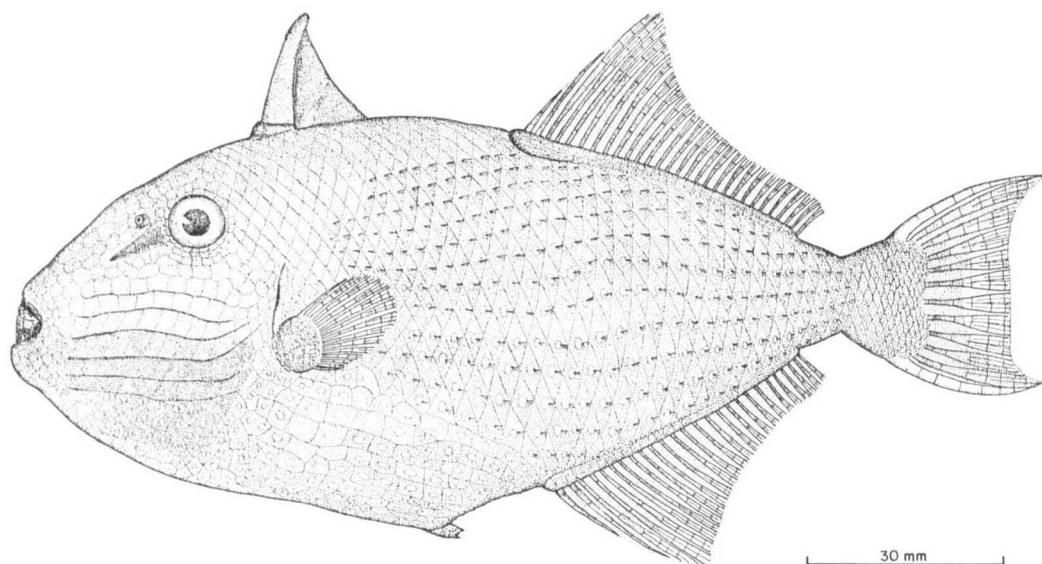


Figure 5. *Xanthichthys auromarginatus*, male, 128 mm SL, Okinawa, HUMZ 40670.

13); body scale rows 42 to 47; head scale rows 17 to 20.

Depth of body at origin of anal fin 2.45–2.68, width of body 5.14–6.24, head length 2.79–3.29, snout length 4.70–5.14, snout to origin of first dorsal fin 2.85–3.39, snout to origin of second dorsal fin 1.54–1.69, snout to origin of anal fin 1.44–1.54, base of second dorsal fin 2.71–2.96, base of anal fin 2.97–3.39—all in standard length. Diameter of orbit 3.57–5.45, interorbital width 2.61–3.05, length of gill opening 3.72–4.80, depth of caudal peduncle 3.44–4.04, length of first dorsal spine 1.54–2.32, length of longest (third to fifth) dorsal ray 1.48–1.81, length of longest (third or fourth) anal ray 1.69–1.92, interdorsal space 1.09–1.35, length of caudal fin 1.31–1.82, caudal concavity 4.10–8.20, length of longest (third or fourth) pectoral ray 2.18–2.91—all in head length.

Five longitudinal grooves separating scale rows on cheek, passing from below and behind corner of mouth nearly to upper pectoral base and gill opening (these grooves angle upward posteriorly and are closer together there). In contrast to the other spe-

cies of the genus, the cheek grooves are poorly developed on *auromarginatus*, being only slightly broader and deeper than the linear gaps between scale rows above and below, and they are not pigmented. On the other hand, the median longitudinal ridges along the scale rows are much stronger and rougher to the touch than those of the other species, and they extend farther forward on the body.

Color in alcohol brown, the scales of the lower half or more of the body usually with a pale spot in center; lips and gill membranes dark brown; anterior nostril in a small white spot; first dorsal fin and base of second dorsal and anal fins dark brown; females with a dark brown margin on second dorsal and anal fins, on upper and lower edges of caudal fin, and with a large dark brown crescent posteriorly in caudal fin; males with broader pale margins on the second dorsal and anal fins and pale margins on the caudal fin corresponding to the dark edges of the females. Males sometimes show a large dark area on the lower part of the head.

In life the body is brownish gray with a bluish or lavender cast, and the pale spots

on the scales are whiter. The margins of the second dorsal, anal, and caudal fins are dark brown or dark reddish brown in females and bright yellow in males; males have a large bright blue patch on the head below the level of the mouth.

**Remarks.**—We examined 19 specimens, ranging from 70 to 156 mm SL. Proportional measurements were taken from 14 of these, 72.3 to 156 mm SL. The 70-mm specimen was not included among those for which measurement data were recorded because it appears to have retained some pre-juvenile characteristics (in other words, it may not be fully transformed); the first dorsal spine is longer, but the anterior second dorsal and anal rays shorter; the caudal fin is shorter and barely emarginate; the pectoral fins are shorter.

The holotype of *Balistes auromarginatus* [BM(NH) 1856.2.15.15, 156 mm SL] was among those measured, as was the lectotype of *Balistes calolepis* Hollard (MNHN B. 1868, 153 mm SL) from Mauritius, erroneously called the holotype by Le Danois (1961) (Hollard based his description on two specimens, one from Mauritius and one from Réunion; the latter is apparently no longer extant).

Other localities from which we have seen specimens are the Maldive Islands, Nicobar Islands, Hawaiian Islands (these three localities recorded by Klauswitz, 1974, the last-mentioned from specimens supplied by the senior author), Cocos-Keeling Islands, Ryukyu Islands, and Marshall Islands.

The last three localities represent new records for the species. The Cocos-Keeling specimens (ANSP 134540-42, 5: 102–127 mm SL) were collected by W. F. Smith-Vaniz and associates in 1974 at a depth range of 12 to 46 m. The Ryukyu fish (HUMZ 40670, 128 mm SL) was taken by S. Gushiken off Okinawa in September 1973. The Marshall Islands specimens (BPBM 17986, 72.3 mm SL; BPBM 18433, 70 mm SL; BPBM 19972, 79 mm SL) were collected by Randall outside the reef on the south side of Kwajalein Atoll in the depth

range of 30 to 46 m in 1974–76. No individuals were seen at this site which exceeded about 100 mm SL. Specimens in the Hawaiian Islands have been collected by Randall at Oahu and the Kona coast of Hawaii in 21 to 30.5 m.

Fourmanoir and Laboute (1976: 252, 260) illustrated both the male and female forms of *X. auromarginatus* (as *Balistes ringens*) from underwater photographs taken in New Caledonia.

Hobson (1974) examined the stomach contents of 11 specimens of this species (which he identified as *X. ringens*) from 98 to 145 mm SL from Hawaii. They had fed exclusively on zooplankton, mainly calanoid copepods.

We propose the English common name "Gilded Triggerfish" and the Japanese common name "Hoshi-mongara" for this species.

#### *Xanthichthys mento* (Jordan and Gilbert)

Figures 2E, 2F, 6A and 6B

*Balistes mento* Jordan and Gilbert, 1882: 228 (type locality, Clarion Island, Revillagigedo Islands).

*Xanthichthys gotonis* Tanaka, 1918: 481, pl. 131, fig. 372 (type locality, Izu, Sagami Sea).

*Xanthichthys purus* Tanaka, 1918: 484, pl. 133, fig. 374 (type locality, Izu, Sagami Sea).

*Xanthichthys surcatus* De Buen, 1963, p. 63, fig. 30 (type locality, Isla de Pascua = Easter Island).

**Description.**—Dorsal soft rays 29 to 32 (usually 30 or 31); anal rays 26 to 29 (usually 27 or 28); pectoral rays 12 to 14 (usually 13); body scale rows 41 to 50; head scale rows 19 to 22.

Depth of body 2.84–3.43, width of body 4.38–6.54, head length 3.02–3.44, snout length 4.58–5.32, snout to origin of first dorsal fin 3.20–3.48, snout to origin of second dorsal fin 1.57–1.77, snout to origin of anal fin 1.46–1.64, base of second dorsal fin 2.71–3.21, base of anal fin 2.94–3.56—all in standard length. Eye diameter 4.30–5.92, interorbital width 2.78–3.21, length of gill opening 3.10–4.47, depth of caudal peduncle 4.07–5.21, length of first dorsal spine 1.55–2.37, length of longest (third or fourth) dorsal ray 1.52–2.03, length of longest

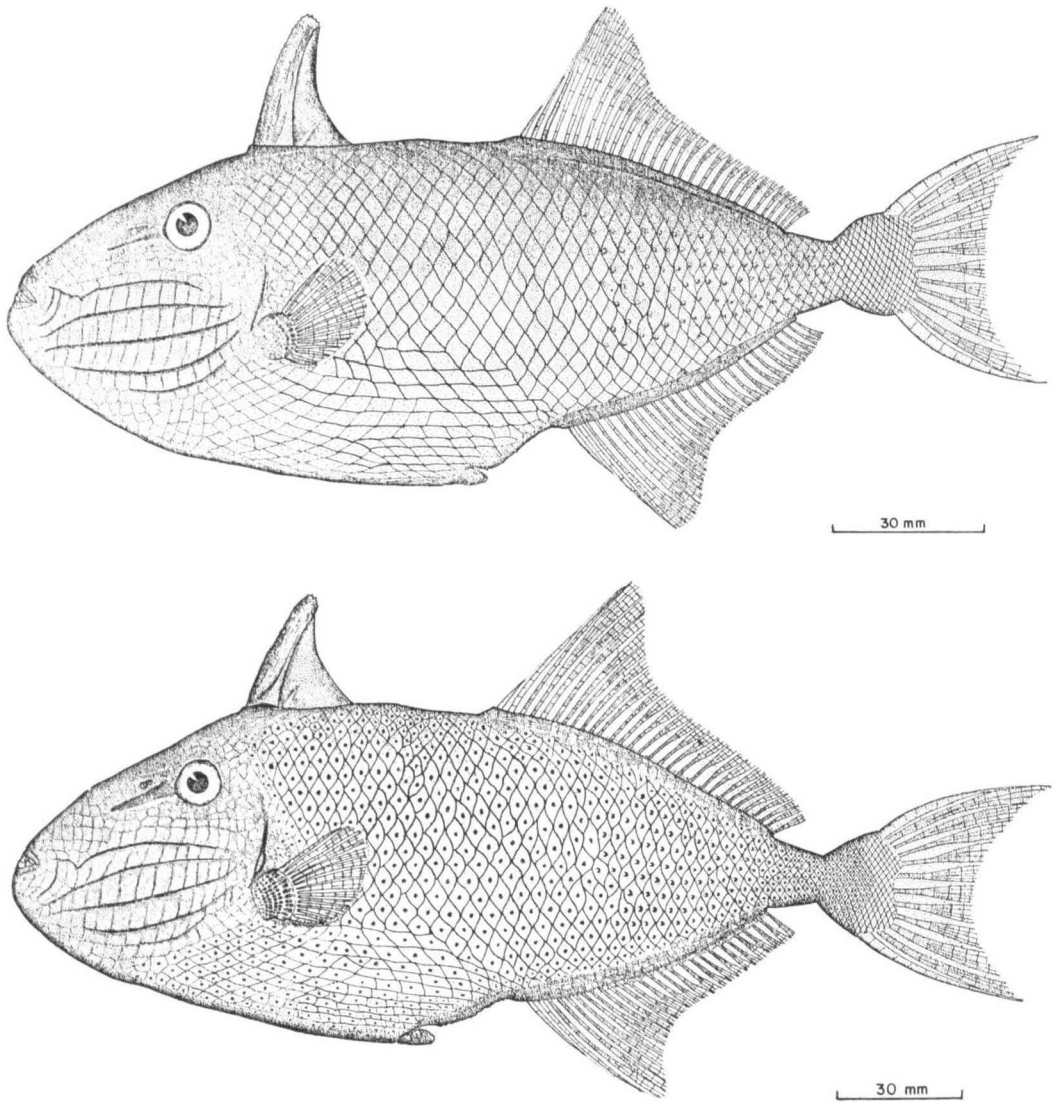


Figure 6. A. *Xanthichthys mento*, female, 165 mm SL, Marcus Island, TUFO 1184; B. *X. mento*, male, 200 mm SL, Marcus Island, TUFO 956.

(third) anal ray 1.63–2.29, interdorsal space 1.04–1.17, length of caudal fin 1.32–1.67, caudal concavity 3.60–5.95, length of longest (second or third) pectoral ray 2.47–3.32—all in head length.

Five longitudinal slightly diagonal darkly pigmented grooves on cheek separating scale rows extending from behind and below corner of mouth nearly to upper pectoral base

and gill opening, the three upper grooves deflected sharply downward onto chin. Scales on side of posterior half of body with some enlarged tubercles in the median line, thus forming feeble longitudinal ridges.

Color in alcohol brown, the narrow inter-spaces between the rows of scales darker brown, with a concentration of dark pigment at the corners of the scales; a dark spot

(sometimes two) in the center of each scale of body (faint or absent on females, usually very evident on males); head may be darker than body; head with five diagonal grooves of dark brown, these dark lines continuing into deflected anterior part of the upper three grooves; a separate dark brown groove just behind corner of mouth parallel with deflected portion of uppermost groove; lips or at least their basal portions dark brown; anterior nostril in a small white spot; first dorsal spine dark brown; membrane of first dorsal fin broadly marked in dark brown and whitish; scaly basal sheath of second dorsal and anal fins dark brown; caudal fin with upper and lower edges and a crescentic posterior margin pale; a narrow dark band in fin submarginal to pale posterior crescent; broad margin of second dorsal and anal fins dusky in females, pale in males.

In life females are brown, sometimes with a bluish cast, the narrow grooves separating the scales of the body darker brown, and a small spot within the grooves at the corner of each scale even darker brown; the head is more bluish, this color mainly in the narrow spaces between the scales; the five prominent grooves on the cheek are bright blue with a narrow dark line in the middle of each; the membrane of the first dorsal fin is bright orange-red and dark brown, the brown concentrated mainly near the margin; the margins of the second dorsal and anal fins are broadly maroon; the margins of the caudal fin are bright orange-yellow with a submarginal blue line (more evident posteriorly than in lobes); pectoral fin rays yellowish.

The males differ significantly from the females in having a more yellowish cast to the body, especially ventrally, and a blue spot on each scale; the margins of the second dorsal and anal fins are bright yellow, and the margins of the caudal fin bright red with a blue submarginal band (better developed than on the female); the broad central region of the caudal fin is reddish brown; the head is more bluish in life, and there is a light blue line from the upper end of the gill

opening which passes irregularly upward to the base of the first dorsal fin and thence posteriorly along the back, just ventral to the dark brown scaly base of the second dorsal fin and joining the submarginal blue band in the caudal fin; a similar blue line may be seen extending forward from the lower submarginal blue band in the caudal fin, along the base of the anal fin, and submarginally along the lower abdomen where it breaks up into a row of dots anteriorly; the ventral edge of the abdomen is dark brown; there is a small light blue spot at the base of each second dorsal and anal fin ray at the edge of the basal scaly sheath. A color note made by Randall of a 199-mm male specimen from Marcus Island included the remark, "the scales on back with a vertically elongate mark of yellow in front of each blue spot."

Berry and Baldwin (1966: fig. 12) illustrated a 55-mm prejuvenile of *X. mento* which displays prominent dark spots on the body.

*Remarks.*—We have examined a total of 64 specimens from 28 to 240 mm SL. Proportional measurements were based on 21 specimens, 103.8 to 240 mm SL.

As indicated by Berry and Baldwin (1966), the holotype of *X. mento* appears to have been lost. This was confirmed by Victor G. Springer (pers. comm.) of the U.S. National Museum of Natural History.

We have seen specimens from the Revillagigedo Islands (the largest specimen, LACM W52-141, 240 mm SL, is from Socorro Island of this group), Clipperton Island, Hawaiian Islands (first reported by Jordan and Evermann, 1905, as *X. lineopunctatus*), Easter Island (first recorded by Kendall and Radcliffe, 1912, also as *X. lineopunctatus*; four additional specimens collected in 1969 at the island by G. R. Allen and Randall, BPBM 6787-88, 124–155 mm SL), Ryukyu Islands, Izu Islands (Masuda, Araga, and Yoshino, 1975, reported *X. mento* as common around the Izu Islands and gave the range in Japan as

"Sagami Bay southward"), Marcus Island (Minami Tori Shima), and Pitcairn Island.

The last two localities represent new records. The first Marcus specimen (BPBM 7176, 199 mm SL) was speared by Randall outside the reef in only 6 m on September 5, 1968. Two others (BPBM 8392, 195–202 mm SL) were collected by the crew of the "Ryofu-Maru" on June 13–15, 1969. Eleven Pitcairn specimens (BPBM 13256, 16822, and 16834, 127–163 mm SL) were caught on hook and line in 18 to 30.5 m by Guy S. Haywood during the Bishop Museum expedition to SE Oceania on "Westward."

Berry and Baldwin (1966, fig. 19) have shown the distribution of *X. mento* in the eastern Pacific from Santa Catalina Island and San Diego in the north (these records from Jordan, 1919, 1924) to Clipperton Island in the south (then a broad gap to Easter Island in the Southern Hemisphere). As with *X. ringens*, the prejuveniles may range far from shore; one of their localities is more than 500 nautical miles off Cabo San Lucas, Baja, California.

One eastern Pacific locality is uncertain (USNM 107182, 195 mm SL); it is given by Schmitt (1938) as "One specimen without label, from between Cedros Island and the Galapagos)."

It is clear from the known range of *X. mento* that the species is anti-tropical in distribution.

Berry and Baldwin (1966) showed that the date of publication of Jordan and Gilbert's description of *X. mento* is 1882, not 1881.

Bailey et al. (1970) have listed the common name of *Xanthichthys mento* for the United States and Canada as "Redtail triggerfish." This is a poor name because only the male has a red caudal fin (and even then, the red color is confined to the margins of the fin). Furthermore, all of the other species of the genus except the male of *auromarginatus* have red or reddish brown on the caudal fin; in the case of *lineopunctatus* there is as much red as the male of *mento*. Two

other common names have been used for *X. mento*, "Crosshatch Triggerfish" and "Blue-face Triggerfish." The latter was proposed by Shiino (1972), but we regard this as inappropriate because it is based on the color of the male and because the males of *X. auromarginatus* have a large blue patch on the face. We believe that "Crosshatch Triggerfish" should be adopted as the official English common name for the species. This makes reference to the two sets of intersecting dark lines that follow the edges of the rhomboidal scales of the body.

The Japanese common name is "Name-mongara."

*Xanthichthys caeruleolineatus* new species  
Figures 2D and 7

*Xanthichthys* sp. Bagnis et al., 1972: 216, fig. (not numbered) (no locality given, but presumed to be French Polynesia).

*Xanthichthys lineopunctatus* Gushiken (non Hollard), 1973: 16, fig. 51 (Okinawa, Ryukyu Islands).

*Xanthichthys* sp. Masuda et al., 1975: 328, pl. 134 M (Okinawa, Ryukyu Islands).

**Holotype.**—BPBM 13211, male?, 196 mm SL, Manihi Atoll, Tuamotu Archipelago, 4 km SE of pass; outside reef in 100 m, hook and line, James R. Haywood from "Westward," April 11, 1971.

**Paratypes.**—AMS IB.1889, 245 mm SL, Ocean Island (0°53'S, 169°35'E), P. B. Laxton, no date of collection, registered 1947; USNM 202851, 3: 307–327 mm SL, Baker Island (0°13'N, 176°28'W), 100 yards off NW reef, 10 pounds of TNT at several hundred feet, Fred C. Sidley, October 16, 1963; BPBM 10016, female, 285 mm SL, Nuku Hiva, Marquesas Islands; off SW point of island, 200 m, hook and line, Guy S. Haywood and J. David Bryant, May 15, 1971; CAS 38035, male?, 222 mm SL, same data as holotype; TUFO 958, male, 205.8 mm SL, 24°16.9'N, 155°58.5'E, Marcus Island, 15 m, hook and line, Akira Zama, August 28, 1973; MTUF 21837, female, 273 mm SL, ca. 30°30'N, 140°20'E, Tori-shima, Izu Islands, Minoru Asai, De-



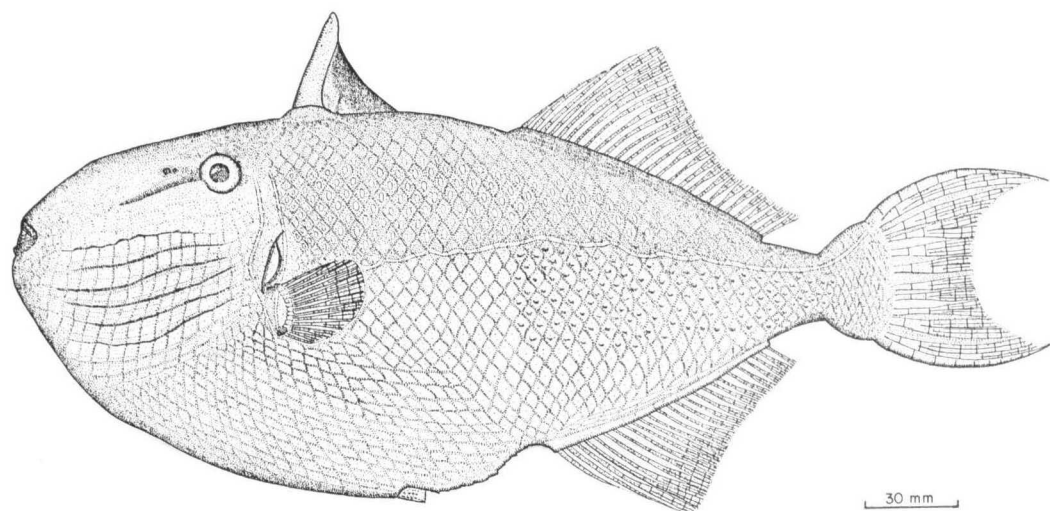


Figure 7. Paratype of *Xanthichthys caeruleolineatus*, male, 265.8 mm SL, Okinawa, HUMZ 40586.

ember 19, 1973; HUMZ 40586, 265.8 mm SL, Okinawa, Ryukyu Islands, hook and line, Takeshi Shimizu, April 5, 1974; HUMZ 35534, male, 226.3 mm SL, Okinawa, Ryukyu Islands, hook and line, Keiichi Matsuura, April 18, 1974; HUMZ 40587, male, 296.8 mm SL, Okinawa, Ryukyu Islands, hook and line, Takeshi Shimizu, April 20, 1974; HUMZ 42302, male, 244.4 mm SL, Okinawa, Ryukyu Islands, hook and line, Keiichi Matsuura, April 26, 1974; HUMZ 41474, female, 307 mm SL, Okinawa, Ryukyu Islands, hook and line, Keiichi Matsuura, May 12, 1975; HUMZ 41475, female, 296.5 mm SL, same data as preceding; USNM 216524, 2: 221 and 234 mm SL, Agalega Islands, St. Brandon's Shoals, NW tip of North Island, hook and line, Thomas H. Fraser, April 18, 1976; MTUF 21838, 181 mm SL, locality and date of collection unknown.

**Description** (data in parentheses apply to paratypes) (see also Table 3).—Dorsal soft rays 27 (26–28), first three unbranched; anal rays 24 (23–25), first three unbranched; pectoral rays 13 (12 or 13, but rarely 12), uppermost and lowermost unbranched; body scale rows 44 (40–48);

head scale rows 23 (21–24); vertebrae 18; gill rakers 40 (39–42, two paratypes only).

Greatest depth of body 2.36 (2.09–2.37), depth at origin of anal fin 2.76 (2.70–3.20), width of body 6.19 (5.39–6.20), head length 3.02 (3.01–3.33), snout length 4.44 (4.29–4.84), snout to origin of first dorsal fin 2.81 (2.78–3.10), snout to origin of second dorsal fin 1.61 (1.57–1.73), snout to origin of anal fin 1.49 (1.42–1.58), base of second dorsal fin 3.11 (3.14–3.33), base of anal fin 3.44 (3.43–3.76)—all in SL. Eye diameter 4.92 (5.10–6.64), interorbital width 2.53 (2.33–2.78), length of gill opening 5.07 (3.98–5.11), length of first dorsal spine 2.08 (1.88–2.48), length of longest (usually the fourth) dorsal soft ray 1.52 (1.58–1.88), length of longest anal ray 1.73 (1.73–2.12), interdorsal space 1.38 (1.13–1.42), length of caudal fin 1.11 (1.10–1.29), caudal concavity 2.18 (2.16–3.88), length of pectoral fin 2.80 (2.83–3.51)—all in head length.

Dorsal and anal profiles of head strongly convex, the ventral more so than the dorsal; six broad diagonal grooves separating scale rows on head, running from behind and below corner of mouth, converging slightly as they pass posteriorly, and nearly reaching gill opening; a deep groove running ante-

Table 3. Measurements of type specimens of *Xanthichthys caeruleolineatus* expressed as hundredths of the standard length

Catalogue number	Holotype		Paratypes			
	BPBM 13211	MTUF 21838	TUFO 958	USNM 216524	HUMZ 35534	HUMZ 42302
Sex	♂	♀	♂	♀	♂	♂
Standard length (mm)	196.0	181.0	205.8	221.0	226.3	244.4
Greatest depth of body	42	48	43	46	47	46
Depth of body at A origin	36	37	32	35	36	34
Width of body	16	18	18	17	16	18
Head length	33	33	33	33	31	32
Snout length	22	22	22	23	22	22
Snout to first dorsal fin	36	36	36	36	36	34
Snout to second dorsal fin	62	64	62	61	62	60
Snout to anal fin	67	70	68	69	69	68
Base of second dorsal fin	32	31	32	32	30	32
Base of anal fin	29	28	27	28	26	27
Eye diameter	07	06	06	06	06	05
Interorbital width	13	13	12	13	13	14
Length of gill opening	06	08	07	07	07	07
Depth of caudal peduncle	09	09	08	08	08	08
Length of first dorsal spine	16	18	16	17	13	15
Length of longest dorsal ray	22	21	20	20	18	17
Length of longest anal ray	19	19	18	17	18	16
Interdorsal space	24	26	24	23	26	24
Length of caudal fin	30	28	*	26	26	26
Caudal concavity	15	15	*	12	08	10
Length of pectoral fin	12	11	10	12	09	10

Catalogue number	Paratypes				
	HUMZ 40586	MTUF 21837	HUMZ 40587	HUMZ 41475	HUMZ 41474
Sex	♂	♀	♂	♀	♀
Standard length (mm)	265.8	273.0	296.8	296.5	307.0
Greatest depth of body	46	44	43	43	42
Depth of body at A origin	35	35	34	34	31
Width of body	18	18	16	18	18
Head length	32	32	31	30	30
Snout length	23	23	23	21	21
Snout to first dorsal fin	35	35	34	32	32
Snout to second dorsal fin	61	60	61	60	58
Snout to anal fin	69	68	67	67	63
Base of second dorsal fin	31	32	32	32	31
Base of anal fin	29	28	28	27	27
Eye diameter	05	05	05	05	05
Interorbital width	12	11	12	11	12
Length of gill opening	08	06	07	08	07
Depth of caudal peduncle	08	08	08	07	07
Length of first dorsal spine	13	14	14	15	14
Length of longest dorsal ray	19	17	17	18	17
Length of longest anal ray	16	15	16	16	15
Interdorsal space	25	24	25	25	26
Length of caudal fin	27	*	26	28	23
Caudal concavity	12	*	12	14	09
Length of pectoral fin	10	09	10	09	08

\* Tip of caudal fin missing.

riorly and diagonally downward from front of eye, extending half the distance to tip of snout; deep median groove behind first dorsal spine occupying about 75 percent of interdorsal space; median tubercles on scales slightly enlarged posteriorly on side of body, forming slight longitudinal ridges; pelvic flap not developed; pelvic terminus barely movable, small, its ventral length contained about three times in pupil diameter.

Color in alcohol yellowish gray-brown, paler ventrally, the narrow linear spaces separating scale rows of body darker than the scales; broad diagonal grooves on cheek are paler than intervening scale rows (which are darker than the scale rows above and below the grooves on the head); upper lip and margin of lower lip darker brown than adjacent mouth region; nostrils within a small pale area; only a trace of the longitudinal line on the side of the body visible on holotype; first dorsal spine pale, the rugose anterior edge a little darker; membrane of fin black except for a region of whitish at inner corner; second dorsal and anal fin rays yellowish brown, the membranes pale; caudal fin yellowish brown, the upper and lower edges narrowly dark brown; pectoral rays light yellowish brown, the membranes pale; a faint brownish bar at base of pectoral fin.

Color in life: upper half of body olive brown, each scale with a vertically elongate irregular light blue line or group of light blue dots (scales antero-dorsally on body with dots), lower half light gray (the narrow linear spaces between the scales and the anterior part of each scale darker), the two areas separated by an irregular light blue line which passes from pectoral axil to upper side of caudal peduncle; an orangish brown band adjacent to upper margin of longitudinal blue line on side of body; an orangish brown band narrowly edged in light blue from lower pectoral base, enclosing gill opening and ending just behind lower part of eye; diagonal grooves on side of head blue, the intervening scale rows brownish yellow, breaking up into spots antero-ventrally; first

dorsal spine olive brown anteriorly, whitish on sides; membranes of first dorsal fin whitish irregularly along base and at inner corner, black distally; base of second dorsal fin a darker olive brown than rest of back; second dorsal and anal fins with dark brown rays and nearly clear membranes; caudal fin with a large inner crescent of bluish gray, the posterior margin broadly reddish brown, the upper and lower margins narrowly reddish brown with a broad submarginal band of red; pectoral fins pale with dusky rays.

*Remarks.*—This species is readily distinguished from all others in the genus by its low dorsal and anal ray counts, high head-scale counts, larger size (our largest is 307 mm SL), and color. Its most characteristic color feature is the blue longitudinal line along the side from which we have based the scientific name. Also distinctive are the six oblique blue grooves on the cheek, which alternate with brownish yellow scale rows, and the red caudal lobes. There seems to be no difference in color with sex.

*X. caeruleolineatus* is broadly distributed in the Indo-Pacific from the Tuamotu Archipelago in eastern Oceania to St. Brandon's Shoals in the Indian Ocean north of Mauritius. All specimens have come from insular localities. We have never observed it while using SCUBA so presume it normally occurs at greater than the usual diving depths (100 to 200 m or more); however, one of our specimens was caught in 15 m.

The specimen identified as *Xanthichthys ringens* by Whitley and Colefax (1938) from Nauru (AMS IA.7153) has been lost, probably during the transfer of specimens from the Museum of Sydney University to the Australian Museum, (John R. Paxton, pers. comm.). Possibly it was *X. caeruleolineatus*. The paratype of *X. caeruleolineatus* from nearby Ocean Island (AMS IB.1889) had been misidentified at the Australian Museum.

We propose the English common name "Blue-line Triggerfish" for this species. Masuda, Araga, and Yoshino (1975) applied the new Japanese common name

"Aosuji-mongara," based on our recommendation.

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